Limited liability company
«Biolabmix»
TIN 5408278957 CAT 540801001
630090, Novosibirsk obl., Novosibirsk,
st. Injenernaya, building № 28
Tel/Fax: +7(383)363-51-91, Tel: +7(383)363-22-40
E-mail: sales@biolabmix.ru

BioMaster UDG HS-qPCR (2×)

Cat. number MH021-400, MH021-2040

Product description:

BioMaster UDG HS-qPCR (2×) kit contains 2× **BioMaster UDG HS-qPCR (2×)** reaction mix and sterile water. **BioMaster UDG HS-qPCR (2×)** is developed for quantitative real-time PCR with fluorescent probes. **BioMaster UDG HS-qPCR (2×)** includes all the components necessary for PCR (excluding DNA template, primers and probe):

- highly processive recombinant HS-*Taq* DNA polymerase;
- uracil-DNA glycosylase;
- deoxynucleoside triphosphate mix;
- PCR buffer;
- Mg^{2+} (5 mM).

The mix is optimized for consistent and efficient real-time hot-start PCR of genomic, plasmid and viral DNA samples. The mix is supplemented with additives that increase half-life and processivity of HS-*Taq* DNA polymerase by enhancing its stability during PCR. **BioMaster UDG HS-qPCR (2×)** does not contain substances affecting primer annealing temperature and characteristics of template melting.

The presence of uracil-DNA glycosylase and dUTP (proportional to TTP) provides reliable protection against reamplification of carryover PCR products between reactions (cross-contamination). DNA polymerase included in the **BioMaster UDG HS-qPCR (2×)** is inactive at room temperature, and its activation requires preheating of the reaction solution at 95 °C for 5 min.

Use of the kit saves time and minimizes contamination risk due to reduced number of pipetting steps.

Product composition

Cat. #	BioMaster UDG HS-qPCR (2×)	Water	Number of reactions (25 µl)
MH021-400	4 × 1.25 ml	4 × 1.25 ml	400
MH020-2140	17 × 1.5 ml	3 × 1.8 ml	2040

BioMaster UDG HS-qPCR (2×) contains:

100 mM Tris-HCl (pH 8.5 at 25 °C), 100 mM KCl, deoxynucleoside triphosphate mix (including dUTP), 10 mM $MgCl_2$, 0.1 U/µL HS-*Taq* DNA polymerase, uracil-DNA glycosylase, 0.025% Tween 20, stabilizers of *HS-Taq* DNA polymerase.

Area of application:

- Real-time hot start PCR with fluorescently labeled probes and ROX as a reference dye;
- Conventional PCR;

- High-throughput PCR;
- Multiplex PCR;
- Genotyping.

Polymerase features

Recombinant *HS-Taq* DNA polymerase possesses 5′-3′ DNA-dependent polymerase activity and 5′-3′ exonuclease activity of native *Taq* DNA polymerase from *Thermus aquaticus*. The extension rate of *Taq* DNA polymerase depends on the complexity of DNA template and is approximately 1 kbp/min. Recombinant form of the enzyme is ideal for both conventional and real-time PCR.

Product features:

- The mix is optimized for real-time hot-start PCR with fluorescently labeled probes;
- Prevents re-amplification of extraneous PCR products;
- The mix contains substances that increase its storage terms (the storage of **BioMaster UDG HS-qPCR (2×)** at room temperature for 7 days does not reduce PCR efficiency) and allow multiple thawing-freezing cycles.

Benefits of use:

- The enzyme with hot start capability enhances reaction specificity;
- Activation of HS-*Taq* DNA polymerase requires not more than 5 min heating;
- High selectivity and reaction yield;
- Reduced preparation time;
- Protection against cross-contamination;
- Standardized conditions of the same-type reactions (reduced pipetting error during mixing PCR components in a series of experiments);
- Minimized efforts.

Limits of use:

Not recommended to use for real-time PCR with intercalating dyes. **BioMaster UDG HS-qPCR SYBR Blue (2×)** or **BioMaster UDG HS-qPCR Hi-ROX SYBR (2×)** should be used for such purposes.

Amplification protocol

1. Thaw the reaction mixture and vortex carefully.
2. Add the following components into thin-wall PCR tubes considering the final volume of a reaction mixture equal to 25 µL:

Component	Volume	Final concentration
BioMaster UDG HS-qPCR (2×)	12,5	1×
Forward primer	variable	0.1 – 600 nM
Reverse primer	variable	0.1 – 600 nM
Probe	variable	0.1 – 300 nM
DNA template	variable	1 pg – 1 µg
Sterile water	up to 25 µL	

3. Carefully vortex and remove droplets by brief centrifugation.

4. Perform PCR, using temperature conditions recommended below:

Step	Temperature, °C	Incubation time	Number of cycles
Anti-contamination treatment	50	2 min	1
Preliminary denaturation	95	5 min	1
Denaturation	95	5-15 sec	30-50
Annealing	50 - 68	5-15 sec	
Elongation	58 - 72	5-30 sec	

Or:

Step	Temperature, °C	Incubation time	Number of cycles
Anti-contamination treatment	50	2 min	1
Preliminary denaturation	95	5 min	1
Denaturation	95	5-15 sec	30-50
Annealing/elongation	50 - 68	30-60 sec	

5. PCR result is displayed as amplification curve.

Storage conditions: in a place protected from light at +25 ° C - 7 days; at +4 ° C - 4 months; at -20 ° C - 18 months; not more than 50 thawing-freezing cycles.

Transportation: Transport in thermocontainers with cooling elements; the ambient temperature increment to the room temperature during the transportation up to 10 days is allowed.